



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,941	11/13/2000	Ralph Arcurio	C-480	6268

7590 02/13/2003

Sidney Persley Esquire  
Sun Chemical Corporation  
222 Bridge Plaza South  
Fort Lee, NJ 07024

EXAMINER

GORR, RACHEL F

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 02/13/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/710,941	Applicant(s) ARCURIO ET AL.	
	Examiner Rachel Gorr	Art Unit 1711	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 50-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> | 6) <input type="checkbox"/> Other:  |

1. The final rejection has been withdrawn because the IDS statement provided new references. The amendment of 1-29-03 has been entered. The amended limitation to the ratio of diamine to NCO overcomes the previous rejections.

2. Claims 1-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The claims are confusing because the rate of prepolymer addition in claims 1 and 29 isn't clear. It isn't understood what the prepolymer weight % is based on. From the explanation of the support for this amendment, it appears to be based on the weight percent of the prepolymer in the system of prepolymer, solvent and diamine of the examples. It would be simpler to just state the weight percent/min based on the weight % of the prepolymer alone ( 100 wt. % over 10–30 minutes or 3.33-10 wt. % /min of prepolymer).

Claim 27 is confusing because it doesn't state what kind of ratio – weight or equivalent.

Claim 36 is confusing because it doesn't state what kind of %.

Claims 24 and 28 don't define the n and m values.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1711

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 3, 5, 6, 8, 9, 11, 13, 15, 16, 18, 19, 20, 21, 24, 25, 27 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP58,194,915 to Fuji Spinning.

JP915 discloses a urethan/urea made in solvent from a prepolymer chain extended with a diamine at an equivalent ratio of diamine to NCO of the prepolymer of 102 %. The prepolymer is made at an NCO/OH ratio of 1.5 and would comprise about 2 wt. % NCO. The prepolymer is made from polycaprolactone diol having a molecular weight of 2000 and hexanediol. When a reference discloses a product that appears to be the same as the product set forth in a product-by-process claim although produced by a different process, the burden is shifted to the applicant to show a difference (in re Marosi, 218 USPQ 289). When a reference discloses all the limitations of a claim except a property and the examiner can't determine if the reference inherently possesses the property (molecular weight), the burden is shifted to the applicant (In re Fitzgerald, 205 USPQ 594).

7. Claims 1-3, 8, 9, 11, 13, 15, 16, 20, 21, 24, 25, 27 and 29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ward (WO360).

Ward discloses, in the example of the table on page 67, a polyurethane/urea made in solvent. He reacts an NCO prepolymer with a diamine at an equivalent ratio of amine from the diamine to NCO of the prepolymer of about 100 %. The prepolymer is made from two diols having molecular weights less than 3000 and 2000, and the prepolymer is made at an NCO/OH ratio of 1.96 with about 4 wt. % NCO content. When a reference discloses a product that appears to be the same as the product set forth in a product-by-process claims although produced by a different process, the burden is shifted to the applicant.

8. Claims 1-5, 7-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Maruo.

9. Chang discloses solvent soluble polyurethane/urea made from a prepolymer of diisocyanate and two diols having molecular weights less than 3000 and 2000 (see examples). In the examples, the prepolymer would have about 5 wt. % NCO content. He teaches adding the prepolymer to the diamine chain extender (reverse addition) (col. 5, line 34) at a ratio of NCO to amine from the diamine of 0.95-1.1 (col. 5, line 62), which overlaps the claims. He discloses using lower molecular weight diols, such as butane diol(col. 2, line 51). In the examples, he shows the polymeric diol having a molecular weight of 1000, and, in col. 3, he discloses polytetramethylene glycol (line 32), polycaprolactone glycols (line 13), and polyoxypropylene glycols (line 33). In the examples, the higher molecular weight polyol is about 50 equiv. % of the diol component. He discloses isophorone diisocyanate (col. 1, line 59), solvents, such as esters and alcohols (col. 4, lines 62-64) and ethylene diamine chain extender (col. 5,

Art Unit: 1711

line 42). He teaches using the solution to coat any substrate (col. 6, lines 56-57). In col. 5, line 25, he teaches making the prepolymer at an NCO/OH ratio of 1.2-2/1, which overlaps the claims. He teaches adding colorant to the solution (col. 6, line 46) and polymeric dispersants (see table, col. 8). In col. 6, lines 26-31, he shows ranges of solids content and viscosities that overlap the claims. He differs from the claims by not specifying the rate of addition of prepolymer to the chain extender, and he doesn't show using the polyurethane/urea as an ink.

10. Maruo discloses similar polyurethane/urea made by adding the prepolymer to the diamine over a period of 10-30 minutes (col. 9, line 60). He discloses using the solution as an ink or a coating (col. 9, line 4).

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the solution of Chang as an ink because Maruo shows that similar coatings can also be used as inks. It would have been obvious to add the prepolymer slowly because Maruo teaches this, and, in synthesis example I-2, he shows good control over the polydispersity, which would make homogeneous solutions.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel Gorr whose telephone number is (703) 308-3608. The examiner can normally be reached on Mon., Tues., Thurs., Fri., from 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned

Art Unit: 1711

are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R.G.  
February 11, 2003

  
**RACHEL GORR**  
**PRIMARY EXAMINER**